CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.03/YGM/WMM/Gradation/2016-17 20.04.2016

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Yelahanka New Town Sub Division, BBMP, Bangalore.

Agency : **Mr. Y.G. Manjunath,** Contractor, Bangalore.

Name of Work : Providing pothole filling in Yelahanka 4th Phase, SFS 407, SFS 208, Ananthpura and other areas in Attur Ward No.03 Yelahanka New Town Sub Division, , BBMP, Bangalore.

Reference : BBMP/AEE/YNSD/ /2016-17 Dated: 16.04.2016

Date of Testing : 20.04.2016

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): 8335

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	250	250	3.0	97.0	95-100
22.4	2550	2800	33.6	66.4	60-80
11.2	1310	4110	49.3	50.7	40-60
4.75	1180	5290	63.5	36.5	25-40
2.36	990	6280	75.3	24.7	15-30
0.600	925	7205	86.4	13.6	8-22
0.075	850	8055	96.6	3.4	0-8

Note:

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Accepted 20/4/16

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Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Yelahanka New Town Sub Division, BBMP, Bangalore.
Agency	**Mr. Y.G. Manjunath,** Contractor, Bangalore.
Name of the Work	Providing pothole filling in Yelahanka 4th Phase, SFS 407, SFS 208, Ananthpura and other areas in Attur Ward No.03 Yelahanka New Town Sub Division, , BBMP, Bangalore.
Reference	BBMP/AEE/YNSD/ /2016-17 Dated: 16.04.2016
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	20.04.2016

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	379	382	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	78	79	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	301	303	
4	Aggregate Impact value = percent fines	20.58	20.68	
	$100^* (W_2/W_1)$%			20.63

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No: CTCE/BBMP/W.No.03/YGM/WMM/S-1/2016-17 20.04.2016

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Yelahanka New Town Sub Division, BBMP, Bangalore.
Agency	**Mr. Y.G. Manjunath,** Contractor, Bangalore.
Name of Work	Providing pothole filling in Yelahanka 4th Phase, SFS 407, SFS 208, Ananthpura and other areas in Attur Ward No.03 Yelahanka New Town Sub Division, , BBMP, Bangalore.
Reference	BBMP/AEE/YNSD/ /2016-17 Dated: 16.04.2016
Technical Reference	IS 2386(Part I) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	20.04.2016

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Result : Flakiness Index = **11.25%**

Elongation Index = **13.45%**

Result : Combined Flakiness & Elongation index 24.70%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Job No: CTCE/BBMP/W.No.03/YGM/BC/Bitumen/2016-17 29.04.2016

BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Yelahanka New Town Sub Division, BBMP, Bangalore.
AGENCY	**Mr. Y.G. Manjunath,** Contractor, Bangalore.
NAME OF THE WORK	Providing pothole filling in Yelahanka 4th Phase, SFS 407, SFS 208, Ananthpura and other areas in Attur Ward No.03 Yelahanka New Town Sub Division, , BBMP, Bangalore.
REFERENCE	BBMP/AEE/YNSD/ /2016-17 Dated: 16.04.2016
SAMPLE I/D	Pothole filling to roads SFS 208, Ananthpura, Yelahanka Ward No.03.
DATE OF TESTING	29.04.2016

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474	473
3. Weight of Asphalt and Mineral matter Extracted, g	-	
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26	27.00
7. Bitumen content in %	5.20	5.40
8. Average	5.30	

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Pradeep AE 29/4

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Job No: CTCE/BBMP/W.No.03/YGM/BC/Bitumen/2016-17 29.04.2016

BITUMEN CONTENT AFTER GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

As Per IS 2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Yelahanka New Town Sub Division, BBMP, Bangalore.
AGENCY	**Mr. Y.G. Manjunath,** Contractor, Bangalore.
NAME OF THE WORK	Providing pothole filling in Yelahanka 4th Phase, SFS 407, SFS 208, Ananthpura and other areas in Attur Ward No.03 Yelahanka New Town Sub Division, , BBMP, Bangalore.
REFERENCE	BBMP/AEE/YNSD/ /2016-17 Dated: 16.04.2016
SAMPLE I/D	Pothole filling to roads SFS 208, Ananthpura, Yelahanka Ward No.03.
DATE OF TESTING	29.04.2016

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	41.28	8.71	8.71	91.29	79-100
9.5	36.32	7.66	16.37	83.63	70-88
4.75	65.15	13.74	30.12	69.88	53-71
2.36	63.32	13.36	43.47	56.53	42-58
1.18	53.12	11.21	54.68	45.32	34-48
0.6	65.25	13.77	68.45	31.55	26-38
0.3	36.13	7.62	76.07	23.93	18-28
0.15	36.32	7.66	83.73	16.27	12-20
0.075	39.66	8.37	92.10	7.90	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	36.23	7.66	7.66	92.34	79-100
9.5	43.15	9.12	16.78	83.22	70-88
4.75	75.12	15.88	32.66	67.34	53-71
2.36	62.32	13.18	45.84	54.16	42-58
1.18	72.32	15.29	61.13	38.87	34-48
0.6	47.23	9.99	71.11	28.89	26-38
0.3	34.12	7.21	78.33	21.67	18-28
0.15	35.26	7.45	85.78	14.22	12-20
0.075	32.16	6.80	92.58	7.42	4-10

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